UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

INDIANA DEMOCRATIC PARTY, *et al.*,	)))	
Plaintiffs,	))	
vs.	))	CAUSE NO: 1:05-CV-0634-SEB-VSS
TODD ROKITA, *et al.*,	)))	
Defendants.	)))	
WILLIAM CRAWFORD, *et al.*,	)))	
Plaintiffs,	))	
vs.	))	
MARION COUNTY ELECTION BOARD,	))	
Defendant, and	)))	
STATE OF INDIANA,	)))	
Intervenor.	)	

AFFIDAVIT OF KIMBALL W. BRACE

Kimball W. Brace, being duly sworn upon his oath, deposes and states as follows:

1.   I am the President of Election Data Services, Inc.

2.   My Company and I were engaged by Plaintiffs Indiana Democratic Party and Marion County Democratic Party to analyze files provided by the Indiana Bureau of Motor Vehicles and the Marion County Board of Voter

EXHIBIT:
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Registration and to prepare a report based upon that analysis for use in connection with this litigation.

3. Attached to this affidavit is a true and accurate copy of the report that I prepared.
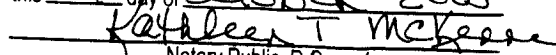
FURTHER AFFIANT SAYETH NOT.

I swear, under the penalties for perjury, that the foregoing representations are true to the best of my knowledge and belief.

Kimball W. Brace

District of Columbia: SS

Subscribed and Sworn to before me, in my presence, this 24 day of OCTOBER 2005

Notary Public, D C

My commission expires 01/14/09

Report on the Matching of

Voter Registration and Driver's License Files in

<u>Indiana Democratic Party et al. v. Todd Rokita et al.</u>

Court Case

Kimball W. Brace
President
Election Data Services, Inc.
Washington, D.C.

September 2005

FINAL VERSION

Kimball W. Brace

Kimball W. Brace

My name is Kimball William Brace. I am President of a company called Election Data Services Inc. (E.D.S. Inc.), a Washington, D.C.-based consulting firm whose specialty is reapportionment, redistricting matters, election administration issues, and the Census. E.D.S. Inc. has been retained by the law firm of Fillenwarth, Dennerline, Groth & Towe in the case cited as Indiana Democratic Party et al. v. Todd Rokita et al. E.D.S. Inc. is billing the law firm for each staff person's time involved in this project, at our normal hourly rates. Attached to this report is a copy of our standard hourly rate sheet (**Exhibit A**). We are also billing any expenses incurred.

I started Election Data Services Inc. in 1977, and have been with the company since that time. Prior to 1977, I was a journalist and was employed by such companies as NBC News, Congressional Quarterly, and Plus Publications. While I was with NBC News, I was a researcher, advance man, and election analyst for the NBC News Elections Unit during the 1972 election year. While at Congressional Quarterly, I was in charge of their congressional voting studies. At Plus Publications, I was Associate Editor of a newsletter called _Election Administration Reports_, a bi-weekly publication for state and county election administrators and registrars.

I attended American University in Washington, D.C., from 1969 through 1974 (having taken a year off for the 1972 campaign), where I earned a BA in Political Science.

Since 1979, I personally and the company have been actively involved in many aspects of the redistricting process, having now gone through three cycles of redistricting and the Census. I have been a consultant for many state and local governments around the nation, and have provided strategic advice and consulting on redistricting matters, coordinated the development of extensive databases used in the redistricting process, developed and assisted others to develop districting plans, and analyzed many aspects of districts and their configurations. More than half the states in the nation have been clients of Election Data Services Inc. for redistricting services over the past 23 years. In addition, I have been called upon to provide expert witness testimony, reports and assistance to attorneys in well over 50 different court cases over the past three decades.

I frequently give speeches to groups and organizations, and participate in numerous conferences and panels, on various aspects of redistricting. I have been a regular participant and speaker to the National Conference of State Legislatures' Task Force on Redistricting, at their annual and bi-annual meetings since the Task Force was created in the early 1980s. I was also sent by the International Foundation for Electoral Systems and the State Department to the Central Asian country of Kazakstan to present a three day workshop on redistricting. I am regularly called upon by members of the press to provide quotes on the subjects of redistricting, reapportionment, the Census, election administration issues, and general politics.

A copy of my vita is attached as **Exhibit B**. As president of Election Data Services Inc., I supervise and usually direct all major projects in which the company is involved, including our efforts to evaluate voter registration and drivers' license files outlined in this Report.

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Election Data Services Inc. has been looked upon by clients, the press, academics, and the general public as a research facility and consulting firm dealing with many aspects of the electoral process. The company and its staff have been hired by state and local governments across the nation to provide software, database development, creation of districting plans, and analysis in many aspects of the redistricting process.

In addition, the company provides assistance in the election administration field to state and local jurisdictions in such areas as precinct management, voter registration systems, and voting equipment evaluation. I personally have been involved in the election administration field for nearly 30 years. While I was in college at American University in the early 1970s, my primary professor was Dr. Richard Smolka, who was starting a bi-weekly publication for state and local election administrators called Election Administration Reports. I worked with him at that time and following employment with NBC News, and Congressional Quarterly, I again worked with Dr. Smolka in 1975 and 1976 when I was Associate Editor of Election Administration Reports. In that job, I was regularly in contact with state and county election officials about the issues of importance to their offices, and traveled to a number of jurisdictions to observe both the elections and recount process.

In 1975, I was also retained as a consultant to the Automatic Voting Machine Company and traveled throughout the nation to observe Election Day operations, particularly in punch card voting jurisdictions. Between 1977 and 1979, I was part of a team that had a contract with the Federal Election Commission to study the use of statistics in the election administration field. As the lead investigator, I traveled throughout the nation to review how numbers were collected, tallied, and used in various elections offices.

In 1980, E.D.S. Inc. was again retained by the Federal Election Commission to compile a listing of what kind of voting system was used in each county of the nation. In the past two decades, we have maintained and updated after each general election a database of this information. Our most recent study of the use of voting systems is available on our website (www.electiondataservices.com), and has been used by the media, the press, and other third party sources around the nation to help explain different voting systems. Our data and maps have been published in USAToday, Newsweek, Time Magazine, the New York Times, the Los Angeles Times, and other publications around the nation. Following the 2000 Presidential election, I was called by 40-50 reporters a day to provide information and comment on the election administration field around the nation. I was also interviewed by NBC, CBS, ABC and CNN numerous times about the 2000 election controversy.

In addition, I was retained by the Gore-Lieberman Campaign Committee and provided expert witness testimony about voting equipment in the Bush v. Gore lower court evidentiary hearing on December 2, 2000. Portions of our voting system database have been purchased by various vendors of voting systems to help in their marketing efforts. In addition, the United States Department of Justice, Anti-Trust Division, retained our services and analyzed our database during their review in the mid-1990s of the merger of two of the largest vendors in the election administration field.

Over the past three decades, I, individually, and along with EDS, Inc. have been involved in various aspects of the election administration process. We have been retained by various local

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jurisdictions to assist them in evaluating different voting systems on the market. We were retained by the Federal Election Commission in 1995-1997 to research and publish a major study on statewide voter registration systems (Developing a Statewide Voter Registration Database; Procedures, Alternatives and General Models). I was principal investigator on that project, and traveled around the nation to visit state election offices. Between 1997 and 1999, EDS, Inc. was retained by the states of North Carolina, Pennsylvania and Illinois to do similar studies for their specific jurisdiction. In each of these studies, I, along with other EDS, Inc. employees, traveled throughout the state to compile information and meet with local election officials.

Since 1993, EDS, Inc. has created and actively markets a computer mapping system designed for local election administrators to help them make changes to voting precincts and update their voter registration systems with the new boundaries. As a result of that work, we traveled to most of the states of the nation to make presentations to local election authorities, as well as attend state specific election conferences designed for those local officials. Since the passage of the Help American Vote Act of 2002 (HAVA), we have been utilizing this program and others to help the creation of statewide voter registration databases and systems in different states. The system is also used to verify that voters are assigned to the correct voting district or precinct. This work has involved a great deal of voter registration file manipulation and correction.

Election Data Services Inc. is just completing a major analysis effort and report for the newly created US Election Assistance Commission dealing with an assessment and compilation of a wide variety of data for the 2004 general election. The full, 300-page report will be available on the Commission's web site, at www.eac.gov.

EDS, Inc regularly collects election return data for every state of the nation. In 1992 we published a nearly 500 page volume of county level registration, turnout, and voting returns for the entire nation (*The Election Data Book: A Statistical Portrait of Voting in America*, 1992 (Bernan Press, 1993)). While we only published the single volume, we have continued to compile a county level database for each general election since that time, which we sell to numerous institutions and organizations.

E.D.S. Inc. offers a wide variety of graphical services, from the creation of maps and posters to working with Census Bureau electronic mapping files. Every election year since 1988, Election Data Services Inc. has produced a full color poster of the nationwide election results within days after the election. This poster can be seen in most congressional offices and the White House.

Indiana Voter Registration and Drivers License Files

This court case deals with the enactment of Senate Enrolled Act 483 (SEA 483), which was signed into law by the Governor of Indiana on April 27, 2005. The legislation is Indiana's version of a "voter ID" law that requires registered voters to show a photo ID in order to vote.

The Indiana law requires potential voters to provide a proof of identification before being allowed to vote. The identification that satisfies the laws' requirements is one that had the name of the individual, which in turn must conform to the name on the voter registration record; contains a photo of the individual; has an expiration date which is after the most recent general election; and which is issued by the United States or the State of Indiana. Presumably, the most

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common identification issued by the State of Indiana that meets these requirements is either the driver's license or the ID issued by the Bureau of Motor Vehicles (BMV).

Election Data Services Inc. was asked to evaluate the file maintained by the BMV to determine the extent to which persons of various demographic and socioeconomic groups would be impacted by the new law. We were initially provided a file by the lawyers in this case on August 2, 2005 that was obtained from the Bureau of Motor Vehicles. The file had 4,878,025 records that encompassed the entire state. This initial BMV file also had just a calculated age of the individual, which made it more difficult to match the BMV file with the records in a registered voter file. We could, however, evaluate duplicate records. An initial evaluation of this BMV file revealed that there were a large number of individuals (287,895, based on a match of unique name, address, gender and age) who actually had two drivers' licenses or forms of IDs. In most instances this was due to the fact that an individual had both a commercial drivers' license as well as a regular drivers' license.

On August 18, 2005, we were provided another copy of the BMV file (with 5,196,162 records); only this time it had the actual date of birth of each individual noted. Using this new information, we were able to determine there were 309,759 duplicate individuals in the file, mostly again where individuals had multiple types of licenses or IDs. In addition, there are 317,138 individuals on the BMV file who were not 18 years old at the time of the file's creation. These individual were eliminated from the analysis, since they could not be a registered voter.

Because SEA 483 affects individuals who are already registered to vote, Election Data Services Inc. sought to obtain a current file of the registered voters in the state. Indiana is like many other states in the nation, in that they are in the process of creating a uniform statewide voter registration system that was mandated by the Help America Vote Act of 2002. That system is supposed to be functioning by January 1, 2006, but it is not there yet. Due to the difficulty of gathering differently formatted voter registration files from the 92 counties in the state, we restricted our research to Marion County (Indianapolis). The county is the largest in the state, and has a significant number of minority group members, along with lower income residents. Due to its urban/suburban nature, and the existence of a metro bus system (IndyGo), it is assumed that it would have a higher number of non-drivers, compared to other jurisdictions in the state.

On August 5, 2005 we were provided by the lawyers in the case, a current voter registration file for Marion County. It showed 610,556 registered voters on the file as of that date. Within that number, there are 770 voters with a current address that falls outside Marion County. It appears that most of them are military or overseas residents, and they were eliminated from the analysis because we would not be able to associate income characteristics to them. In addition, there were 31,294 registered voters whose addresses were unable to match with available street standardization software to a census block that had any voting age population reported by the 2000 Census.

The goal of our research was to determine how many registered voters had a driver's license or ID issued by the BMV, as well as to determine the characteristics of the registered voters who apparently do not have such licenses or IDs.

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Matching records between two different files (i.e., voter registration v. Bureau of Motor Vehicles) entails judgment at each step of the process. Imagine each time you fill out a government form or a form on the internet. Do you always use your full name, do you use a middle initial, do you spell them the same or abbreviate sometimes? Do you spell your street name the same way, do you call it a street sometimes and a court other times, when asked for a date of birth, do you just put down the month and year and leave off the specific day. Depending upon which form you're filling out, do you want to appear older and therefore add years to your birth date, or desire to appear younger and put down a later year.

If you're working on the internet, you have an advantage, since you can see what you're typing and make corrections before you hit the send button. But if you're filling out a paper form, can the person who will ultimately enter the data into a database understand each letter you've used on your form. Do you're A's look like O's? Are your M's and N's close enough in form so that they can be confused? Do the 6's and 8's look the same, or the 1's (number one) and the l's (lowercase letter L)? All of these facts have a bearing on whether two records can be matched together. If social security numbers are available, then the matching process can be easier, but in most instances dealing with voter registration, these nearly unique identifiers are not given.

Table C, attached to this report, shows the number of records that could be matched together between the two files according to various match criteria. The top of the report shows the most stringent match criteria, where all elements of the records in the two files are exactly the same. Nearly 35% of the registered voters (or 213,491) had the same ZIP+4, standardized street address, date of birth (dob), last name (lname), first name (fname), the first nine characters of the middle name (left (mname,9)), and the same first three characters of the name suffix (such as Jr., Sr., etc) (left(namesuf,3)) as did the records in the Drivers' file.

We then loosened the criteria for a match in different ways, and each row in Table C reflects how many additional registered voters were able to match to a record in the drivers file with that match criteria. A summary of how the criteria were loosened is at the right of the table. For example, by just looking at the middle initial, rather than the full middle name, we were able to match another 58,143 registered voters (row 8a).

With each loosening of the match criteria, however, one introduces more potential error. For example, by eliminating the middle name as a match criterion, one had a greater likelihood of confusing twins in the match.

Tracking some geographic information, for example, the matching of a ZIP code, allows up to nearly 60 percent of the two files to be matched together. But because people move and don't always update one or the other records, eliminating geographic information from the match allows another 16-17 percent of the file to get matched together. If one assumes that a last name and a date of birth is all that's required to assume the person is the same individual, than slightly over 76 percent of the registered voter file can be shown to have a drivers license or a license ID. The date of birth deserves special mention. For most private companies doing file maintenance, such as credit companies, or even for most voter registration software, the date of birth is generally a field that is relied upon to ensure that the two records belong to the same individual. As noted above and in Table C, the same date of birth and last name brings together over three-quarters of the two files.

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In working with the files, however, we discovered a phenomenon that raises questions about relying on the exact date of birth to assume a match. We found between 4 and 5 percent of the files had all the same information (i.e., name, address, etc) but the date of birth was slightly off. Sometimes they were off by a single day, or a single month, or even a single year. Sometimes it was off by many years, for example, the person with the same name and address could be found in one file with a birth date of 1966 and in the other file with a birth date of 1986. What we found appears to be the problem of data entry, and it appears that numbers have the greater potential of errors being introduced into a file. We obviously don't know which of the records contains the correct information, but errors in date of birth have a very strong possibility of preventing matches from happening. In some states this can even mean that an individual may not be able to register to vote, because some have taken the position that a match to a license file is required.

Despite the potential for errors in the date of birth, eliminating this information will probably tip the balance in determining whether a match is good or potentially bad. As noted in Table C, just relying on a last name and first name match with pick up another 15 percent of the voters (see line 0x and X), but at what cost? There are lots of individuals named John Smith, but they are not all the same individual. I'm constantly getting e-mail for someone called Karen Brace, but I know she's not me.

In order to determine the demographic characteristics of individuals on either the BMV or the registered voter lists, we have taken their street address and geo-coded the census block upon which they live. The geo-coding process is a procedure where an individual's street address is matched to the appropriate street and street address range, which in turn is associated with the census block on one or the other side of the street. In much the same way that demographic and list maintenance companies perform their work, we have subscribed the attributes of the census block to the individuals living there, on the basis of the demographic percentages coming from the 2000 Census. This is outlined in the following section.

Determining Income and Educational Compositions

We are able to determine the income and educational compositions of the individuals on the registered voter list and on the BMV file by applying data from the US Census Bureau's 2000 data set. The Census Bureau undertakes a census of the population every ten years and then publishes the data summarized to several levels of geography. The data collected includes information on household median income and educational achievement, along with other pieces of information. Counts, totals and averages are summarized at various geographic levels, including county, census block groups, and census blocks.

Income and educational data is available on the block group level; a block group is composed of a number of individual blocks and is usually associated with a neighborhood. The income and education data for each block group was assigned by us to the individual blocks contained within the block group.

Using specialty geocoding software, we are able to determine what census block an individual address is located for everyone in both the BMV and registered voter files. We disqualify for

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analysis any individuals whom we could not assign to a block. We are then able to create four counts for each census block: the number of individuals on the BMV list, the number on the registered voters list, the number of registered voters who were matched to the BMV list, and the number of registered voters who were not matched to the BMV list.

These data is then applied to make inferences about those four populations who reside within each block. For the education grouping, we applied the ratio of the Census Bureau data to the population within each block and then calculated the sum of each block.

Because the Census Bureau calculates the median household income for a given piece of geography, we have assigned that income level to all the individuals in the four datasets that fell into the particular given block. For example, to determine the total number of registered voters who were unmatched and earned less than $15,000, we summed the unmatched registration from all the blocks whose median income was less than $15,000. Marion County was reported by the Census Bureau to have a median household income of $40,421 in 2000.

While it is not possible to discern these demographic statistics on an individual basis, using the Census Bureau data published for the level of geography closest to the individual – the block – we can make reasonable conclusions about each of the four populations in question.

Minimum Number of Voters Without an ID

At the very least, our research found that 51,392 registered voters (or 8.42% of the voter file) could not be found on the driver's license file. We were able to match 49,418 to populated census blocks within Marion County. These individually would most definitely be impacted by the requirements of SEA 483, in that they don't have an ID that has been issued by the BMV. We know there are at least this many voters, but we suspect there are more voters, as will be shown below.

Table D, attached to this report, shows the results of the demographic matching on the registered voters that could not be found at all in the drivers' license file. This table is called "LOOSE MATCH" in its' title, in order to distinguish it from subsequent tables. The left five columns of this table present the data from the 2000 Census for Marion County for both its population and voting age population base. The demographic characteristics tracked for this analysis includes median household income and education.

The impact on the demographic and socioeconomic groups can be seen by the fact that lower income and education areas have a larger proportion of the individuals who do not have drivers license or IDs than they are of the total voting age population. Lower income individuals were found to not have a state issued ID at nearly twice the rate of upper income persons. Over 13 percent of the registered voters who reside in areas with a median household income of less than $15,000 could not be matched to anyone in the drivers' file, while only 7.1 percent of voters in income areas of more than $55,000 could not be found in the ID file.

Tightening the Match Criteria

As noted above, this very loose match has probably lead to a high number of errors, where voters

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and drivers have been joined together on the basis of just their name. This is the fact, even though other elements of information in the file show the individuals to have different birth dates, are from different parts of the county or even from different parts of the states. As a result, it is my belief that it's best to include at least a loose match on date of birth so that it becomes a factor in determining whether the individuals are the same between the two files. Due to the errors noted above in the date of birth fields, our loose date of birth criteria would allow persons who were within the same year of birth to be matched. This would keep, for example, a father and same-named son from being matched as the same individual, but would allow the another individual with a typo in their birth date on one file to be identified and matched in both files.

Using this overall tighter requirement for a match to occur, we find that slightly less than 141,000 registered voters would be categorized as not having a drivers' license. This represents approximately 23 percent of the voter file in Marion County. Matching these voters to a populated census block within the county brings our "unmatched to drivers file" base down to slightly more than 135,000 registered voters, or 23.45 percent of the voters that could get matched to a census block. The exact numbers associated with the matching of the two files can be found in Table E, which is attached to this report.

Using the same methodology outlined above, we have taken these registered voters and their associated block demographics in order to determine the characteristics of the voters who do not have a drivers' license. Table F, attached to this report shows the demographic makeup of this analysis. The five columns at the farthest right of the table focuses on the registered voters who are unmatched to any record in the drivers' file, using the match criteria outlined above.

The income data shows an even more marked trend in the analysis. As income drops, the rate of voters without a drivers' license or ID increases. For example, those registered voters living in areas with median household income of over $55,000 showed only 17.0 percent without an ID or license, while those in areas with incomes of under $15,000 showed over 38.9 percent without an ID or license.

The education information also provides a clue at what would take place if voters had to use a drivers' license or ID. Those registered voters without a license or ID make up 25.7 percent of all the registered voters that reside in areas with persons having no high school degree. This is higher than the 22.4 percent of voters with a graduate degree that don't have an ID.

Active v. Inactive Status

One of the fields in the voter registration file is labeled "Status" and contains values of either "A" or "I". In most states this refers to whether the voter is considered "Active" or "Inactive". Generally a voter is considered to be "Active" when they register. A voter can be changed to "Inactive" if an election administrator is unable to contact the individual with either a query or to provide updated information (such as a new precinct or polling place, etc.). In most states this occurs when a notice is sent via US Mail and it comes back to the election office as "undeliverable". Under the provisions of the National Voter Registration Act of 1993 (NVRA) a voter can not be purged from the registration rolls for two federal elections, but they can be designed as "Inactive". Inactive voters are still able to vote in an election (usually by showing a proper form of identification) and some states still consider them part of the registration rolls.

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A separate analysis of the 140 thousand "unmatched to BMV" voters found that nearly half of them were "Inactive". As a result, we analyzed just the "active" voter that could not be found in the BMV file for their demographic and socioeconomic characteristics. Table G, attached to this report, shows the results of this analysis. The patterns found in the earlier analysis and in the earlier tables are also found in Table G dealing with just the "Active" voters. Lower income individuals are more than twice as likely to be without a driver's license or ID, compared to upper income voters.

Conclusion

Based on our analysis to date, it is clear that there will be a significant number of individuals impacted by the implementation of SEA 483. Our research shows that at least 51,000 registered voters, and more likely 141,000 registered voters, in Marion County alone would have to obtain a drivers license or ID in order to vote. If these patterns were to hold true for the rest of the state, as many as 989,000 registered voters in the state could be challenged when they try to go vote in November, 2006.

The analysis clearly shows that lower income individuals are disproportionately impacted by the "voter ID" requirements of the new law. Because other studies have shown that lower income individuals already participate less in the electoral process, the implementation of SEA 483 could easily wipe out their involvement in voting.

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Exhibits and attachments for Kimball Brace's Expert Witness Report

A – Election Data Services Inc. hourly rates
B – Vita for Kimball Brace
C – Match results between registered voter file and BMV driver's license and ID list
D – Loose match demographic analysis
E – Match matrix
F – Demographic analysis results
G – Demographic analysis results for "active" voters

EXHIBIT A

HOURLY RATES FOR
Election Data Services, Inc.
PERSONNEL

Project Coordinator/Expert Witness (Kimball Brace) $210

Deputy Coordinator (Patricia Cummings Fetter) $150

Political Scientist/Expert Witness $200

Statistician $150

GIS Programmer $140

Senior Programmer $135

Programmer $100

Research Associate $95

Database Specialist $95

Computer Support Staff $65

Support Staff $45

Depositions, court testimony and employee hours in excess of eight (8) hours per day or forty (40) hours per week, including, but not limited to holidays and weekends, shall be billed at 150 percent of the above rates when such hours are the result of deadlines imposed by or authorized by the client.

(03/2003)

EXHIBIT B

VITA

KIMBALL WILLIAM BRACE

Election Data Services, Inc.
1400 I Street N.W., Suite 400
Washington, DC 20005–2208

202 789.2004 phone
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kbrace@aol.com

Kimball Brace is the president of Election Data Services Inc., a consulting firm that specializes in redistricting, election administration, and the analysis and presentation of census and political data. Mr. Brace graduated from the American University in Washington, D.C., (B.A., Political Science) in 1974 and founded Election Data Services in 1977.

Redistricting Consulting

Activities include software development; construction of geographic, demographic, or election databases; development and analysis of alternative redistricting plans; general consulting, and onsite technical assistance with redistricting operations.

Congressional and Legislative Redistricting

Arizona Independent Redistricting Commission: Election database, 2001

Arizona Legislature, Legislative Council: Election database, 2001

Colorado General Assembly, Legislative Council: Geographic, demographic, and election databases, 1990–91

Connecticut General Assembly
  - Joint Committee on Legislative Management: Election database, 2001; and software, databases, general consulting, and onsite technical assistance, 1990–91
  - Senate and House Democratic Caucuses: Demographic database and consulting, 2001

Florida Legislature, House of Rep.: Geographic, demographic, and election databases, 1989–92

Illinois General Assembly
  - Speaker of House and Senate Minority Leader: Software, databases, general consulting, and onsite technical assistance, 2000–02
  - Speaker of House and President of Senate: Software, databases, general consulting, and onsite technical assistance, 1990–92, and 1981-82

Iowa General Assembly, Legislative Service Bureau and Legislative Council: Software, databases, general consulting, and onsite technical assistance, 2000–01 and 1990–91

Kansas Legislature: Databases and plan development (state senate and house districts), 1989

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(Redistricting Consulting, cont.)

Massachusetts General Court
- Senate Democratic caucus: Election database and general consulting, 2001–02
- Joint Reapportionment Committees: Databases and plan development (cong,, state senate, and state house districts), 1991–93

Michigan Legislature: Geographic, demographic, and election databases, 1990–92; databases and plan development (cong., state senate, and state house districts), 1981-82

Missouri Redistricting Commission: General consulting, 1991–92

Commonwealth of Pennsylvania: General consulting, 1992

Rhode Island General Assembly and Reapportionment Commissions
- Software, databases, plan development, and onsite assistance (cong., state senate, and state house districts), 2001–02 and 1991–92
- Databases and plan development (state senate districts), 1982-83

State of South Carolina: Plan development and analysis (senate), U.S. Dept. of Justice, 1983–84

Local Government Redistricting

Orange County, Calif.: Plan development (county board), 1991–92

City of Bridgeport, Conn.: Databases and plan development (city council), 2002–03

Cook County, Ill.: Software, databases, and general consulting (county board), 2001–02, 1992–1993, and 1989

Lake County, Ill.: Databases and plan development (county board), 1981

City of Chicago, Ill.: Software, databases, general consulting, and onsite technical assistance (city wards), 2001–02 and 1991–92

City of North Chicago, Ill.: Databases and plan development (city council), 1991 and 1983

City of Annapolis, Md.: Databases and plan development (city council), 1984

City of Boston, Mass.: Databases and plan development (city council), 1993

City of New Rochelle, N.Y.: Databases and plan development (city council), 1991–92

City of New York, N.Y.: Databases and plan development (city council), 1990–91

Cities of Pawtucket, Providence, East Providence, and Warwick, and town of North Providence, R.I.: Databases and plan development (city wards and voting districts), 2002

City of Woonsocket and towns of Charlestown, Lincoln, and Westerly, R.I.: Databases and plan development (voting districts), 2002; also Westerly 1993

City of Houston, Tex.: Databases and plan development (city council), 1979 — recommended by U.S. Department of Justice

City of Norfolk, Va.: Databases and plan development (city council), 1983–84 — for Lawyers' Committee for Civil Rights

Virginia Beach, Va.: Databases and plan development (city council), 2001–02, 1995, and 1993

Kimball W. Brace, Vita, page 3

Other Redistricting Activities

International Foundation for Electoral Systems (IFES) and U.S. Department of State: redistricting seminar, Almaty, Kazakhstan, 1995

Library of Congress, Congressional Research Service: Consulting on reapportionment, redistricting, voting behavior and election administration

Election Administration Consulting

Activities include seminars on election administration topics and studies on voting behavior, voting equipment, and voter registration systems.

United States Election Assistance Commission: Tabulate, analyze, and report the results of three surveys distributed to state election directors during FY–2005 and develop recommendations on future data collection. The surveys are the 2004 Election Day, Military and Overseas Absentee Ballot (UOCAVA), and Voter Registration (NVRA) Surveys.

Rhode Island Secretary of State: Verification of precinct and district assignment codes in municipal registered voter files and production of street files for a statewide voter registration database, 2004.

District of Columbia, Board of Elections and Ethics (DCBOEE): Verification of election ward, Advisory Neighborhood Commission (ANC), and Single-Member District (SMD) boundaries and production of a new street locator, 2003. Similar project, 1993.

Harris County, Tex.: Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2002–03

Cook County, Ill., Election Department and Chicago Board of Election Commissioners:
- Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2002–03
- Study on voting equipment usage and evaluation of punch card voting system, 1997

Library of Congress, Congressional Research Service: Nationwide, biannual studies on voter registration and turnout rates, 1978–2002

U.S. General Accounting Office (GAO), U.S. Dept. of Justice, and numerous voting equipment vendors: Data on voting equipment usage throughout the United States, 1980–2002

Needs assessments and systems requirement analyses for the development of statewide voter registration systems:
- Illinois State Board of Elections: 1997
- North Carolina State Board of Elections, 1995
- Secretary of Commonwealth of Pennsylvania, 1996

Federal Election Commission, Office of Election Administration:
- Study on integrating local voter registration databases into statewide systems, 1995
- Nationwide workshops on election administration topics, 1979–80
- Study on use of statistics by local election offices, 1978–79

Cuyahoga County, Ohio, Board of Elections: Feasibility study on voting equipment, 1979

Winograd Commission, Democratic National Committee: Analysis of voting patterns, voter registration and turnout rates, and campaign expenditures from 1976 primary elections

Kimball W. Brace, Vita, page 4

Mapping and GIS

Activities include mapping and GIS software development (geographic information systems) for election administration and updating TIGER/Line files for the decennial census.

2000 Census Transportation Planning Package (CTPP), 1998–99: GIS software for the U.S. Department of Transportation to distribute to 400 metropolitan planning organizations (MPOs) and state transportation departments for mapping traffic analysis zones (TAZs) for the 2000 census; provided technical software support to MPOs

Census 2000 Redistricting Data Program, Block Boundary Suggestion Project (Phase 1) and Voting District Project (Phase 2), 1995–99: GIS software and provided software, databases, and technical software support to the following program participants:
- Alaska Department of Labor
- Connecticut Joint Committee on Legislative Management
- Illinois State Board of Elections
- Indiana Legislative Services Agency
- Iowa Legislative Service Bureau
- New Mexico Legislative Council Service
- Rhode Island General Assembly
- Virginia Division of Legislative Services

Developed PRECIS® Precinct Information System—GIS software to delineate voting precinct boundaries—and delivered software, databases, and technical software support to the following state and local election organizations (with date of installation):
- Cook County, Ill., Department of Elections (1993)
- Marion County, Fla., Supervisor of Elections (1995)
- Berks County Clerk, Penn. (1995)
- Hamilton County, Ohio, Board of Elections (1997)
- Brevard County, Fla., Supervisor of Elections (1999)
- Osceola County, Fla., Supervisor of Elections (1999)
- Multnomah County, Ore, Elections Division (1999)
- Chatham County, Ga., Board of Elections (2000)
- City of Chicago, Ill., Board of Election Commissioners (2000)
- Mahoning County, Ohio, Board of Elections (2000)
- Iowa Secretary of State, Election and Voter Registrations Divisions (2001)
- Woodbury County, Iowa, Elections Department (2001)
- Franklin County, Ohio, Board of Elections (2001)
- Cobb County, Ga., Board of Elections and Voter Registration (2002)

Illinois State Board of Elections, Chicago Board of Election Commissioners, and Cook County Election Department: Detailed maps of congressional, legislative, judicial districts, 1992

Associated Press: Development of election night mapping system, 1994

Kimball W. Brace, Vita, page 5

Litigation Support

Activities include data analysis, preparation of court documents and expert witness testimony. Areas of expertise include the census, demographic databases, district compactness and contiguity, racial bloc voting, communities of interest, and voting systems. Redistricting litigation activities also include database construction and the preparation of substitute plans.

Linda Shade v. Maryland State Board of Elections (2004), electronic voting systems

Gongaley v. City of Aurora, Ill. (2003), city council districts

State of Indiana v. Sadler (2003), ballot design (city of Indianapolis-Marion County, Ind.)

Peterson v. Borst (2002–03), city-council districts (city of Indianapolis-Marion County, Ind.)

New Rochelle Voter Defense Fund v. City of New Rochelle, City Council of New Rochelle, and Westchester County Board Of Elections (2003), city council districts (New York)

Charles Daniels and Eric Torres v. City of Milwaukee Common Council (2003), council districts (Wisconsin)

The Louisiana House of Representatives v. Ashcroft (2002–03), state house districts

Camacho v. Galvin and *Black Political Caucus v. Galvin* (2002–03), state house districts (Massachusetts)

Latino Voting Rights Committee of Rhode Island, et al., v. Edward S. Inman, III, et al. (2002–03), state senate districts

Metts, v. Harmon, Almond, and Harwood, et al. (2002–03), state senate districts (Rhode Island)

Joseph F. Parella, et al. v. William Irons, et al. (2002–03), state senate districts (Rhode Island)

Jackson v. County of Kankakee (2001–02), county commissioner districts (Illinois)

Corbett, et al., v. Sullivan, et al. (2002), commissioner districts (St Louis County, Missouri)

Harold Frank, et al., v. Forest County, et al. (2001–02), county commissioner districts (Wisc.)

Albert Gore, Jr., et al., v. Katherine Harris as Secretary of State, State of Florida, et al., and The Miami Dade County Canvassing Board, et al., and The Nassau County Canvassing Board, et al., and The Palm Beach County Canvassing Board, et al., and George W. Bush, et al (2000), voting equipment design — Leon County, Fla., Circuit Court hearing, December 2, 2000, on disputed ballots in Broward, Volusia, Miami-Dade, and Palm Beach counties from the November 7, 2000, presidential election.

Barnett v. Daley/PACI v. Daley/Bonilla v. Chicago City Council (1992–98), city wards

Donald Moon, et al. v. M. Bruce Meadows, etc and Curtis W. Harris, et al. (1996–98), congressional districts (Virginia)

Melvin R. Simpson, et al. v. City of Hampton, et al. (1996–97), city council districts (Va.)

In the Matter of the Redistricting of Shawnee County Kansas and Kingman, et al. v. Board of County Commissioners of Shawnee County, Kansas (1996), commissioner districts

Vecinos de Barrio Uno v. City of Holyoke (1992–96), city council districts (Massachusetts)

Kimball W. Brace, Vita, page 6

(Litigation Support, cont.)

Torres v. Cuomo (1992–95), congressional districts (New York)

DeGrandy v. Wetherell (1992–94), congressional, senate, and house districts (Florida)

Johnson v. Miller (1994), congressional districts (Georgia)

Jackson, et al v Nassau County Board of Supervisors (1993), form of government (N.Y.)

Gonzalez v. Monterey County, California (1992), county board districts

LaPaille v. Illinois Legislative Redistricting Commission (1992), senate and house districts

Black Political Task Force v. Connolly (1992), senate and house districts (Massachusetts)

Nash v. Blunt (1992), house districts (Missouri)

Fund for Accurate and Informed Representation v. Weprin (1992), assembly districts (N.Y.)

Mellow v. Mitchell (1992), congressional districts (Pennsylvania)

Phillip Langsdon v. Milsaps (1992), house districts (Tennessee)

Smith v. Board of Supervisors of Brunswick County (1992), supervisor districts (Virginia)

People of the State of Illinois ex. rel. Burris v. Ryan (1991–92), senate and house districts

Good v. Austin (1991–92), congressional districts (Michigan)

Neff v. Austin (1991–92), senate and house districts (Michigan)

Hastert v. Illinois State Board of Elections (1991), congressional districts

Republican Party of Virginia et al. v. Wilder (1991), senate and house districts

Jamerson et al. v. Anderson (1991), senate districts (Virginia)

Ralph Brown v. Iowa Legislative Services Bureau (1991), redistricting database access

Williams, et al. v. State Board of Election (1989), judicial districts (Cook County, Ill.)

Fifth Ward Precinct 1A Coalition and Progressive Association v. Jefferson Parish School Board (1988–89), school board districts (Louisiana)

Michael V. Roberts v. Jerry Wamser (1987–89), St. Louis, Mo., voting equipment

Brown v. Board of Commissioners of the City of Chattanooga, Tenn. (1988), county commissioner districts

Business Records Corporation v. Ransom F. Shoup & Co., Inc. (1988), voting equip. patent

East Jefferson Coalition for Leadership v. The Parish of Jefferson (1987–88), parish council districts (Louisiana)

Buckanaga v. Sisseton School District (1987–88), school board districts (South Dakota)

Griffin v. City of Providence (1986–87), city council districts (Rhode Island)

United States of America v. City of Los Angeles (1986), city council districts

Latino Political Action Committee v. City of Boston (1984–85), city council districts

Ketchum v. Byrne (1982–85), city council districts (Chicago, Ill.)

Kimball W. Brace, Vita, page 7

(Litigation Support, cont.)

State of South Carolina v. United States (1983–84), senate districts — U.S. Dept. of Justice

Collins v. City of Norfolk (1983–84), city council districts (Virginia) — for Lawyers' Committee for Civil Rights

Rybicki v. State Board of Elections (1981–83), senate and house districts (Illinois)

Licht v. State of Rhode Island (1982–83), senate districts (Rhode Island)

Agerstrand v. Austin (1982), congressional districts (Michigan)

Farnum v. State of Rhode Island (1982), senate districts (Rhode Island)

In Re Illinois Congressional District Reapportionment Cases (1981), congressional districts

Publications

William Kimberling, ed., *Developing a Statewide Voter Registration Database: Procedures, Alternatives, and General Models*, by Kimball W. Brace and M. Glenn Newkirk (Washington, D.C.: Federal Election Commission, Office of Election Administration, Autumn 1997).

Kimball W. Brace, ed., *The Election Data Book: A Statistical Portrait of Voting in America*, 1992 (Bernan Press, 1993)

"Geographic Compactness and Redistricting: Have We Gone Too Far?", presented to Midwestern Political Science Association, April 1993 (with D. Chapin and R. Niemi)

"Whose Data is it Anyway: Conflicts between Freedom of Information and Trade Secret Protection in Redistricting", *Stetson University Law Review*, Spring 1992 (with D. Chapin and W. Arden)

"Numbers, Colors, and Shapes in Redistricting," *State Government News*, December 1991 (with D. Chapin)

"Redistricting Roulette," *Campaigns and Elections*, March 1991 (with D. Chapin)

"Redistricting Guidelines: A Summary", presented to the Reapportionment Task Force, National Conference on State Legislatures, November 9, 1990 (with D. Chapin and J. Waliszewski)

"The 65 Percent Rule in Legislative Districting for Racial Minorities: The Mathematics of Minority Voting Equality," *Law and Policy*, January 1988 (with B. Grofman, L. Handley, and R. Niemi)

"Does Redistricting Aimed to Help Blacks Necessarily Help Republicans?" *Journal of Politics*, February 1987 (with B. Grofman and L. Handley)

"New Census Tools," *American Demographics*, July/August 1980

Kimball W. Brace, Vita, page 8

Professional Activities

Delegate, Second Trilateral Conference on Electoral Systems (Canada, Mexico, and United States), Ontario, Canada, 1995; and Third Trilateral Conference on Electoral Systems, Washington, D.C., 1996

Member, American Association of Political Consultants

Member, American Association for Public Opinion Research

Member, American Political Science Association

Member, Association of American Geographers, Census Advisory Committee

Member Board of Directors, Association of Public Data Users

Member, National Center for Policy Alternatives, Voter Participation Advisory Committee

Member, Urban and Regional Information Systems Association   9/05

TABLE C

9/17/2005 Match between 8/5/05 Marion County registered voter list and 8/18/05 BMV drivers license and ID list

bmv_mq	bmv_mq cnt	% of file	Cum Num	Cum %	Criteria for match	Summary of Criterial	Comments
9a	213,491	34.97%	213,491	34.97%	zipplus4+std_addr+dob+lname+fname+left(mname,9)+left(namesuf,3)	Everything matches exactly	
9b	3,473	0.57%	216,964	35.54%	zipplus4+baseaddr+dob+lname+fname+left(mname,9)+left(namesuf,3)		std_addr is full postal standardized address / baseaddr drops apartment
9c	2,933	0.48%	219,897	36.02%	zipplus4+baseaddr+dob+lname+left(fname,3)+left(mname,9)+left(namesuf,3)		Shorten first name to 3 characters to match / Pat and Patricia, Don and Donald, Matt and Matthew, Chris and Christopher
9d	7,014	1.15%	226,911	37.16%	zipplus4+baseaddr+lname+left(fname,3)+left(mname,9)+left(namesuf,3)		Drop DOB to match missing or wrong DOB
8a	58,143	9.52%	285,054	46.69%	zipplus4+std_addr+dob+lname+fname+left(mname,1)+left(namesuf,3)	Change middle name to middle initial	std_addr
8b	1,033	0.17%	286,087	46.86%	zipplus4+baseaddr+dob+lname+fname+left(mname,1)+left(namesuf,3)		baseaddr
8c	889	0.15%	286,976	47.00%	zipplus4+baseaddr+dob+lname+left(fname,3)+left(mname,1)+left(namesuf,3)		First name shortened to 3 characters
8d	1,619	0.27%	288,595	47.27%	zipplus4+baseaddr+lname+left(fname,3)+left(mname,1)+left(namesuf,3)		Drop DOB
7a	29,044	4.76%	317,639	52.02%	zipplus4+std_addr+dob+lname+fname+left(namesuf,3)	Drop middle name completely	std_addr
7b	396	0.06%	318,035	52.09%	zipplus4+baseaddr+dob+lname+fname+left(namesuf,3)		baseaddr
7c	1,605	0.26%	319,640	52.35%	zipplus4+baseaddr+dob+lname+left(fname,3)+left(namesuf,3)		First name shortened to 3 characters
7d	2,152	0.35%	321,792	52.70%	zipplus4+baseaddr+lname+left(fname,3)+left(namesuf,3)		Drop DOB
6a	5,646	0.92%	327,438	53.63%	zipplus4+std_addr+dob+lname+fname+left(mname,1)	Drop name suffix	Jr. Sr. III
6b	129	0.02%	327,567	53.65%	zipplus4+baseaddr+dob+lname+fname+left(mname,1)		baseaddr
6c	133	0.02%	327,700	53.67%	zipplus4+baseaddr+dob+lname+left(fname,3)+left(mname,1)		First name shortened to 3 characters
6d	905	0.15%	328,605	53.82%	zipplus4+baseaddr+lname+left(fname,3)+left(mname,1)		Drop DOB
5a	504	0.08%	329,109	53.90%	zipplus4+std_addr+dob+lname+fname	Drop middle name and name suffix	std_addr
5b	13	0.00%	329,122	53.91%	zipplus4+baseaddr+dob+lname+fname		baseaddr
5c	64	0.01%	329,186	53.92%	zipplus4+baseaddr+dob+lname+left(fname,3)		First name shortened to 3 characters
5d	184	0.03%	329,370	53.95%	zipplus4+baseaddr+lname+left(fname,3)		Drop DOB
4a	20,515	3.36%	349,885	57.31%	zip+dob+lname+fname+left(mname,9)+left(namesuf,3)	5-digit ZIP, no address, fullname	
4d	395	0.06%	350,280	57.37%	zip+dob+lname+left(fname,3)+left(mname,9)+left(namesuf,3)		First name shortened to 3 characters
4e	2,159	0.35%	352,439	57.72%	zip+dob+lname+left(fname,1)+left(mname,9)+left(namesuf,3)		First name shortened to initial
3a	6,325	1.04%	358,764	58.76%	zip+dob+lname+fname+left(mname,1)+left(namesuf,3)	5-digit ZIP, no address, middle initial	
3d	139	0.02%	358,903	58.78%	zip+dob+lname+left(fname,3)+left(mname,1)+left(namesuf,3)		First name shortened to 3 characters
3e	862	0.14%	359,765	58.92%	zip+dob+lname+left(fname,1)+left(mname,1)+left(namesuf,3)		First name shortened to initial
2a	4,275	0.70%	364,040	59.62%	zip+dob+lname+fname+left(namesuf,3)	5-digit ZIP, no address, no middle initial	
2b	712	0.12%	364,752	59.74%	zip+dob+lname+left(fname,1)+left(mname,1)		
2d	290	0.05%	365,042	59.79%	zip+dob+lname+left(fname,3)+left(namesuf,3)		First name shortened to 3 characters
2e	908	0.15%	365,950	59.94%	zip+dob+lname+left(fname,1)+left(namesuf,3)		First name shortened to initial
1a	104	0.02%	366,054	59.95%	zip+dob+lname+fname	5-digit ZIP, DOB, last, first name	
1d	9	0.00%	366,063	59.96%	zip+dob+lname+left(fname,3)		First name shortened to 3 characters
1e	31	0.01%	366,094	59.96%	zip+dob+lname+left(fname,1)		First name shortened to initial
0a	98,053	16.06%	464,147	76.02%	dob+lname+fname	DOB, last, first name	
0c	3,226	0.53%	467,373	76.55%	dob+lname+left(fname,3)		First name shortened to 3 characters
0e	2,356	0.39%	469,729	76.93%	dob+lname+left(fname,1)		First name shortened to initial
0x	26,719	4.38%	496,448	81.31%	lname+fname	last, first name nonconflicting middlename	
X	62,716	10.27%	559,164	91.58%	lname+fname	last, first name	
	51,392	8.42%	610,556	100.00%	No match		
	610,556	100.00%			Total Marion County registered voters		

TABLE D

Marion County, Indiana – LOOSE MATCH
Demographic Analysis - Registered Voter and BMV* Files
Block Level Match**

	Population		Voting Age Population			Bureau of Motor Vehicles				Registered Voters (RV)				BMV Matched Voters (MV)					BMV Unmatched Voters (UV)				
	Total	% of Total Pop	Total	% of Total VAP	% POP	Total	% of Total BMV	% of VAP	% of RV	Total	% of Total RV	% of VAP	% of BMV	Total	% of Total MV	% of VAP	% of RV	% of BMV	Total	% of Total UV	% of VAP	% of RV	% of BMV
TOTALS	860,438	100.0	638,705	100.0	74.2	609,961	100.0	95.5	105.4	578,492	100.0	90.6	94.8	529,074	100.0	82.8	91.5	86.7	49,418	100.0	7.7	8.5	8.1
Median Household Income																							
Less than $15,000	8,954	1.0	7,014	1.1	78.3	5,264	0.9	75.0	83.3	6,317	1.1	90.1	120.0	5,488	1.0	78.2	86.9	104.3	829	1.7	11.8	13.1	15.7
Less than $25,000 and More than $15,000	80,146	9.3	57,553	9.0	71.8	49,713	8.2	86.4	105.2	47,266	8.2	82.1	95.1	42,665	8.1	74.1	90.3	85.8	4,601	9.3	8.0	9.7	9.3
Less than $35,000 and More than $25,000	228,838	26.6	165,925	26.0	72.5	151,782	24.9	91.5	114.3	132,823	23.0	80.1	87.5	120,977	22.9	72.9	91.1	79.7	11,846	24.0	7.1	8.9	7.8
Less than $45,000 and More than $35,000	192,166	22.3	146,901	23.0	76.4	141,577	23.2	96.4	109.6	129,178	22.3	87.9	91.2	116,966	22.1	79.6	90.5	82.6	12,212	24.7	8.3	9.5	8.6
Less than $55,000 and More than $45,000	172,952	20.1	133,758	20.9	77.3	125,845	20.6	94.1	100.5	125,275	21.7	93.7	99.5	115,082	21.8	86.0	91.9	91.4	10,193	20.6	7.6	8.1	8.1
More than $55,000	177,382	20.6	127,554	20.0	71.9	135,780	22.3	106.4	98.7	137,633	23.8	107.9	101.4	127,896	24.2	100.3	92.9	94.2	9,737	19.7	7.6	7.1	7.2
EDUCATION																							
No high school degree or GED	162,930	18.9	118,742	18.6	72.9	111,709	18.3	94.1	113.1	98,739	17.1	83.2	88.4	90,344	17.1	76.1	91.5	80.9	8,395	17.0	7.1	8.5	7.5
High school degree or GED	256,901	29.9	189,218	29.6	73.7	179,725	29.5	95.0	109.2	164,534	28.4	87.0	91.5	151,100	28.6	79.9	91.8	84.1	13,434	27.2	7.1	8.2	7.5
Some College	181,149	21.1	134,398	21.0	74.2	128,618	21.1	95.7	104.9	122,575	21.2	91.2	95.3	112,190	21.2	83.5	91.5	87.2	10,385	21.0	7.7	8.5	8.1
Associates or Bachelors Degree	187,529	21.8	141,544	22.2	75.5	136,540	22.4	96.5	99.3	137,463	23.8	97.1	100.7	125,211	23.7	88.5	91.1	91.7	12,252	24.8	8.7	8.9	9.0
Graduate Degree	71,883	8.4	54,762	8.6	76.2	53,205	8.7	97.2	96.8	54,976	9.5	100.4	103.3	50,054	9.5	91.4	91.0	94.1	4,922	10.0	9.0	9.0	9.3

* Bureau of Motor Vehicles file of those age 18 and higher.

**Only registered voters who were able to be spatially assigned to the smallest level of census geography, the block.

Match Matrix

TABLE E

Marion County, Indiana
Match Matrix – Registered Voter and BMV Files

		BMV	RV	MV	UV
Total Records Received	Count	4,878,025	610,556	469,854	140,702
	% Matched/Unmatched		100.00%	76.96%	23.04%
Addresses Outside Marion Cnty		4,156,047	770		
Total Within County	Count	721,978	609,786	469,217	140,569
	% of Total	14.80%	99.87%	99.86%	99.91%
	% Matched/Unmatched		100.00%	76.95%	23.05%
Duplicate Records		62,243			
Deduped	Count	659,735	NA	NA	NA
	% of Total	13.52%			
Unmatched to Blocks		21,030	31,294		
Full Match to Populated Blocks	Count	638,705	578,492	442,863	135,629
	%	88.47%	94.87%	94.38%	96.49%
	% Matched/Unmatched		100.00%	76.55%	23.45%

9/20/2005

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Demographic Analysis

TABLE F

Marion County, Indiana
Demographic Analysis – Registered Voter and BMV* Files
Block Level Match**

	Population		Voting Age Population			Bureau of Motor Vehicles				Registered Voters (RV)				BMV Matched Voters (MV)					BMV Unmatched Voters (UV)				
	Total	% of Total Pop	Total	% of Total VAP	% of POP	Total	% of Total BMV	% of VAP	% of RV	Total	% of Total RV	% of VAP	% of BMV	Total	% of Total MV	% of VAP	% of RV	% of BMV	Total	% of Total UV	% of VAP	% of RV	% of BMV
TOTALS	860,438	100.0	638,705	100.0	74.2	609,961	100.0	95.5	105.4	578,492	100.0	90.6	94.8	442,749	100.0	69.3	76.5	72.6	135,743	100.0	21.3	23.5	22.3
Median Household Income																							
Less than $15,000	8,954	1.0	7,014	1.1	78.3	5,264	0.9	75.0	83.3	6,317	1.1	90.1	120.0	3,859	0.9	55.0	61.1	73.3	2,458	1.8	35.0	38.9	46.7
Less than $25,000 and More than $15,000	80,146	9.3	57,553	9.0	71.8	49,713	8.2	86.4	105.2	47,266	8.2	82.1	95.1	32,495	7.3	56.5	68.7	65.4	14,771	10.9	25.7	31.3	29.7
Less than $35,000 and More than $25,000	228,838	26.6	165,925	26.0	72.5	151,782	24.9	91.5	114.3	132,823	23.0	80.1	87.5	96,915	21.9	58.4	73.0	63.9	35,908	26.5	21.6	27.0	23.7
Less than $45,000 and More than $35,000	192,166	22.3	146,901	23.0	76.4	141,577	23.2	96.4	109.6	129,178	22.3	87.9	91.2	96,069	21.7	65.4	74.4	67.9	33,109	24.4	22.5	25.6	23.4
Less than $55,000 and More than $45,000	172,952	20.1	133,758	20.9	77.3	125,845	20.6	94.1	100.5	125,275	21.7	93.7	99.5	99,137	22.4	74.1	79.1	78.8	26,138	19.3	19.5	20.9	20.8
More than $55,000	177,382	20.6	127,554	20.0	71.9	135,780	22.3	106.4	98.7	137,633	23.8	107.9	101.4	114,274	25.8	89.6	83.0	84.2	23,359	17.2	18.3	17.0	17.2
EDUCATION																							
No high school degree or GED	162,930	18.9	118,742	18.6	72.9	111,709	18.3	94.1	113.1	98,739	17.1	83.2	88.4	73,412	16.6	61.8	74.3	65.7	25,327	18.7	21.3	25.7	22.7
High school degree or GED	256,901	29.9	189,218	29.6	73.7	179,725	29.5	95.0	109.2	164,534	28.4	87.0	91.5	126,233	28.5	66.7	76.7	70.2	38,301	28.2	20.2	23.3	21.3
Some College	181,149	21.1	134,398	21.0	74.2	128,618	21.1	95.7	104.9	122,575	21.2	91.2	95.3	94,195	21.3	70.1	76.8	73.2	28,379	20.9	21.1	23.2	22.1
Associates or Bachelors Degree	187,529	21.8	141,544	22.2	75.5	136,540	22.4	96.5	99.3	137,463	23.8	97.1	100.7	106,103	24.0	75.0	77.2	77.7	31,360	23.1	22.2	22.8	23.0
Graduate Degree	71,883	8.4	54,762	8.6	76.2	53,205	100.0	97.2	96.8	54,976	100.0	100.4	103.3	42,688	9.6	78.0	77.6	80.2	12,288	100.0	22.4	22.4	23.1

* Bureau of Motor Vehicles file of those age 18 and higher.

**Only registered voters who were able to be spatially assigned to the smallest level of census geography, the block.

Demographic Analysis

TABLE G

Marion County, Indiana - ACTIVE VOTERS
Demographic Analysis - Registered Voter and BMV* Files
*Block Level Match***

	Population		Voting Age Population			Bureau of Motor Vehicles				Registered Voters (RV)				BMV Matched Voters (MV)					BMV Unmatched Voters (UV)				
	Total	% of Total Pop	Total	% of Total VAP	% of POP	Total	% of Total BMV	% of VAP	% of RV	Total	% of Total RV	% of VAP	% of BMV	Total	% of Total MV	% of VAP	% of RV	% of BMV	Total	% of Total UV	% of VAP	% of RV	% of BMV
TOTALS	860,438	100.0	638,705	100.0	74.2	609,961	100.0	95.5	129.2	472,094	100.0	73.9	77.4	398,382	100.0	62.4	84.4	65.3	73,712	100.0	11.5	15.6	12.1
Median Household Income																							
Less than $15,000	8,954	1.0	7,014	1.1	78.3	5,264	0.9	75.0	117.7	4,471	0.9	63.7	84.9	3,214	0.8	45.8	71.9	61.1	1,257	1.7	17.9	28.1	23.9
Less than $25,000 and More than $15,000	80,146	9.3	57,553	9.0	71.8	49,713	8.2	86.4	140.0	35,521	7.5	61.7	71.5	27,698	7.0	48.1	78.0	55.7	7,823	10.6	13.6	22.0	15.7
Less than $35,000 and More than $25,000	228,838	26.6	165,925	26.0	72.5	151,782	24.9	91.5	149.5	101,544	21.5	61.2	66.9	82,866	20.8	49.9	81.6	54.6	18,678	25.3	11.3	18.4	12.3
Less than $45,000 and More than $35,000	192,166	22.3	146,901	23.0	76.4	141,577	23.2	96.4	141.8	99,851	21.2	68.0	70.5	83,827	21.0	57.1	84.0	59.2	16,024	21.7	10.9	16.0	11.3
Less than $55,000 and More than $45,000	172,952	20.1	133,758	20.9	77.3	125,845	20.6	94.1	117.8	106,837	22.6	79.9	84.9	91,747	23.0	68.6	85.9	72.9	15,090	20.5	11.3	14.1	12.0
More than $55,000	177,382	20.6	127,554	20.0	71.9	135,780	22.3	106.4	109.6	123,870	26.2	97.1	91.2	109,030	27.4	85.5	88.0	80.3	14,840	20.1	11.6	12.0	10.9
EDUCATION																							
No high school degree or GED	162,930	18.9	118,742	18.6	72.9	111,709	18.3	94.1	142.2	78,542	16.6	66.1	70.3	64,499	16.2	54.3	82.1	57.7	14,043	19.1	11.8	17.9	12.6
High school degree or GED	256,901	29.9	189,218	29.6	73.7	179,725	29.5	95.0	133.3	134,807	28.6	71.2	75.0	113,248	28.4	59.9	84.0	63.0	21,559	29.2	11.4	16.0	12.0
Some College	181,149	21.1	134,398	21.0	74.2	128,618	21.1	95.7	128.5	100,106	21.2	74.5	77.8	84,816	21.3	63.1	84.7	65.9	15,290	20.7	11.4	15.3	11.9
Associates or Bachelors Degree	187,529	21.8	141,544	22.2	75.5	136,540	22.4	96.5	121.1	112,739	23.9	79.6	82.6	96,458	24.2	68.1	85.6	70.6	16,280	22.1	11.5	14.4	11.9
Graduate Degree	71,883	8.4	54,762	8.6	76.2	53,205	8.7	97.2	116.2	45,781	9.7	83.6	86.0	39,265	9.9	71.7	85.8	73.8	6,516	8.8	11.9	14.2	12.2

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